

DERWENT-ACC-NO: 1975-81662W

DERWENT-WEEK: 197550

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TITLE: Silicon nitride protective coating prodn on
semiconductor - by thermal decompn of alkyl- or
aryl-substd. silicon-nitrogen cpd

PATENT-ASSIGNEE: SIEMENS AG[SIEI]

PRIORITY-DATA: 1966DE-1544287 (April 29, 1966)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
DE 1544287 B	December 4, 1975	N/A	000 N/A

INT-CL (IPC): B01J017/32

ABSTRACTED-PUB-NO: DE 1544287B

BASIC-ABSTRACT:

In the prodn. of a Si_3N_4 protective coating on the surface of a semiconductor crystal, esp. of Si, by thermal deposition from a suitable reaction gas, the active constituent of the gas consists of alkyl- or aryl-aminosilanes, -amino-alkylsilanes or -silazanes or cyclic alkyl- or aryl-substd. Si-N cpds. The deposition temp. can be much lower than for the reaction of SiCl_4 or SiH_4 with NH_3 and the process avoids the formation of intermediates contg. Si-H groupings, which can impair the properties of the coating.

TITLE-TERMS: SILICON NITRIDE PROTECT COATING PRODUCE
SEMICONDUCTOR THERMAL
ALKYL ARYL SUBSTITUTE SILICON NITROGEN COMPOUND

DERWENT-CLASS: L03 U11

CPI-CODES: L03-D03D;

81

BUNDESREPUBLIK DEUTSCHLAND

Int. Cl.:

B 01 j

C 23 c

DEUTSCHES PATENTAMT



82

Deutsche Kl.: 12 g, 17/32
48 b, 11/08

86

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Ausstellungspriorität: —

91

Unionspriorität

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Datum: —

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Land: —

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Aktenzeichen: —

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Bezeichnung: Verfahren zum Herstellen einer Schutzschicht aus einer Silizium- oder Germaniumstickstoff-Verbindung an der Oberfläche eines Halbleiterkristalls

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Zusatz zu: —

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Ausscheidung aus: —

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Anmelder: Siemens AG, Berlin und München, 8000 München

Vertreter: —

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Benachrichtigung gemäß Art. 7 § 1 Abs. 2 Nr. 1 d. Ges. v. 4. 9. 1967 (BGBl. I S. 960): 25. 4. 1968

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EUROPEAN PATENT APPLICATION

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C23C 16/40**

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89 Designated Contracting States:
DE FR GB

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54 Ultra-thin dielectric for microelectronics applications.

57 A system for fabricating an ultra-thin composite dielectric, usable for the capacitor in DRAM and in other integrated circuits, involving the deposition, a LPCVD tube, of a nitride (3) in situ on a very thin LPCVD oxide (2). By re-oxidizing the nitride (3) or depositing a LPCVD oxide layer (4, 4') in situ there-

on, a composite ONO dielectric, having very low defect density and good overall electric properties, of less than 10 nm in thickness and as low as 4.5 nm, may be formed.

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FIG. 1

